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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-24034; Directorate Identifier 2006-NE-05-AD; Amendment 39-14729; AD 2006-17-08]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney PW4077D, PW4084D, PW4090, and PW4090-3 Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Pratt & Whitney (PW) PW4077D, PW4084D, PW4090, and PW4090-3 turbofan engines that were reassembled with certain previously used high pressure compressor (HPC) exit brush seal assembly parts and certain new or refurbished HPC exit diffuser air seal inner lands. This AD requires replacing the HPC exit inner and outer brush seal packs with new brush seal packs, or replacing the HPC exit brush seal assembly with a new HPC exit brush seal assembly. This AD results from a report of oil leaking into the high pressure turbine (HPT) interstage cavity and igniting, leading to an engine case penetration and engine in-flight shutdown. Although liberated engine parts did not penetrate the engine nacelle, we are issuing this AD to prevent uncontained engine failure, damage to the airplane, and injury to passengers.

DATES: This AD becomes effective September 27, 2006. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of September 27, 2006.

ADDRESSES: You can get the service information identified in this ad from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770; fax (860) 565-4503.

You may examine the AD docket on the Internet at <http://dms.dot.gov> or in Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Antonio Cancelliere, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7751; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed airworthiness directive (AD). The proposed AD applies to Pratt & Whitney (PW) PW4077D, PW4084D, PW4090, and PW4090-3 turbofan engines that were reassembled with certain

previously used HPC exit brush seal assembly parts and certain new or refurbished HPC exit diffuser air seal inner lands. We published the proposed AD in the Federal Register on April 19, 2006 (71 FR 20042). That action proposed to require replacing the HPC exit inner and outer brush seal packs with new brush seal packs, or replacing the HPC exit brush seal assembly with a new HPC exit brush seal assembly.

Examining the AD Docket

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the Docket Management Facility Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES. Comments will be available in the AD docket shortly after the DMS receives them.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request to More Accurately Describe the Unsafe Condition

The Boeing Company requests that we more accurately describe the unsafe condition. They propose that we state the unsafe condition as "This AD results from a report of oil leaking into the high pressure turbine (HPT) interstage cavity and igniting, leading to an engine case penetration and engine in-flight shutdown. Although liberated engine parts did not penetrate the engine nacelle, we are proposing this AD to prevent uncontained engine failure, damage to the airplane, and injury to passengers."

We agree and adopted the suggested language.

Request for Clarification

Japan Airlines requests clarification of the compliance on whether "cycles-since-last-overhaul (CSLO)" applies to the engine's last shop visit or if it applies to overhaul of the HPC diffuser assembly only.

We agree we need to clarify the compliance. The CSLO applies to overhaul of the HPC diffuser assembly only. As a result of the comment, we rewrote compliance paragraphs (g)(1) and (g)(2) to read as follows:

"(1) By 3,000 cycles-in-service (CIS) since a used HPC exit inner brush seal pack and a new or refurbished HPC exit diffuser air seal land were installed in the engine, or by March 31, 2007, whichever occurs later; however

(2) If on March 31, 2007, the used HPC exit inner brush seal pack coupled with a new or refurbished HPC exit diffuser air seal inner land assembly has not accumulated 3,000 CIS, then by 3,000 CIS, or December 31, 2008, whichever occurs first."

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

We estimate that this AD will affect 76 PW PW4077D, PW4084D, PW4090, and PW4090-3 turbofan engines installed on airplanes of U.S. registry. We also estimate that it will take about 9 work-hours per engine to perform the parts replacement, and that the average labor rate is \$80 per work-hour. Required parts will cost about \$100,017 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$7,656,012.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

U.S. Department
of Transportation
**Federal Aviation
Administration**



2006-17-08 Pratt & Whitney: Amendment 39-14729. Docket No. FAA-2006-24034; Directorate Identifier 2006-NE-05-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective September 27, 2006.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Pratt & Whitney (PW) PW4077D, PW4084D, PW4090, and PW4090-3 turbofan engines that were:

- (1) Reassembled with a previously used high pressure compressor (HPC) exit inner brush seal pack, part number (P/N) 50J894-01; and
 - (2) Reassembled with a new or refurbished HPC exit diffuser air seal inner land, P/N 55H869.
- (d) These engines are installed on, but not limited to, Boeing 777 airplanes.

Unsafe Condition

(e) This AD results from a report of oil leaking into the high pressure turbine (HPT) interstage cavity and igniting, leading to an engine case penetration and engine in-flight shutdown. Although liberated engine parts did not penetrate the engine nacelle, we are issuing this AD to prevent uncontained engine failure, damage to the airplane, and injury to passengers.

Compliance

(f) You are responsible for having the actions required by this AD performed at the following compliance times, unless the actions have already been done.

(g) Replace the HPC exit inner and outer brush seal packs with new HPC exit inner and outer brush seal packs, or replace the HPC exit brush seal assembly with a new HPC exit brush seal assembly as follows:

- (1) By 3,000 cycles-in-service (CIS) since a used HPC exit inner brush seal pack and a new or refurbished HPC exit diffuser air seal land were installed in the engine, or by March 31, 2007, whichever occurs later; however,
- (2) If on March 31, 2007, the used HPC exit inner brush seal pack coupled with a new or refurbished HPC exit diffuser air seal inner land assembly has not accumulated 3,000 CIS, then by 3,000 CIS, or December 31, 2008, whichever occurs first.

(h) Use the Accomplishment Instructions of PW Service Bulletin No. PW4G-112-A72-280, Revision 1, dated March 21, 2006, to do the inner and outer brush pack replacements.

Alternative Methods of Compliance

(i) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Related Information

(j) None.

Material Incorporated by Reference

(k) You must use Pratt & Whitney Service Bulletin No. PW4G-112-A72-280, Revision 1, dated March 21, 2006, to perform the replacements required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770; fax (860) 565-4503, for a copy of this service information for a copy of this service information. You may review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on August 14, 2006.

Thomas A. Boudreau,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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